Kittery, Maine- Mosquito Surveillance Summary 2012

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The Maine State testing criteria for 2012:

The mosquito season was separated into two phases for mosquito submissions; phase I (early season) and phase II (mid to end season).

a. Phase I - July 1 through October 1, 2012 or first Maine EEE or WNV detection (dates pertain to date of collection):

i. *Ae. vexans, Cs. inornata, Cs. melanura, Cx. pipiens, Cx. restuans, Cx. pipiens/restuans* and *Cq. perturbans :* Only these species will be tested. Any pool size may be submitted for testing but pool size cannot exceed 50 mosquitoes. As soon as EEE or WNV is detected in Maine, mosquito submissions will follow phase II.

ii. Other mosquito species: During the mosquito season, please discard (or hold internally if interested) any mosquitoes that are not *Ae. vexans, Cs. inornata, Cs. melanura, Cx. pipiens, Cx. restuans, Cx. pipiens/restuans* or *Cq. perturbans.* Other mosquito species may be tested on a case by case basis, as resources and time allow. As soon as EEE or WNV is detected in Maine, mosquito submissions will follow phase II.

b. Phase II - First Maine EEE or WNV detection through October 1, 2012 (dates pertain to date of collection):

i. If presence of either EEE or WNV detected in Maine, the testing criteria will be reevaluated and additional species may be tested.

ii. Other mosquito pools not meeting the above criteria: Other mosquito species may be tested on a case by case basis, as resources and time allow. Otherwise, please discard (or hold internally if interested) any mosquitoes that do not meet the above criteria.

2012 Kittery Summary:

Adult mosquito surveillance was conducted from 06/6/2012 to 9/25/2012

Although the Maine State lab did not accept specimens until July 1st, we started trapping in June to track/assess annual mosquito populations for *Cq. perturbans* (cattail swamp mosquito) treatments.

6 pools consisting of 28 adult *Cs. melanura* specimens collected in June, 2012 were sent, as a separate company project, to Connecticut Agricultural Experimental Station for analysis and EEE testing. Results for 2012 are pending. All batches sent for 2011 tested negative for WNV/EEE.

2	6/6/2012	Kittery Town Forest	ME	**L**	*Cs*	*melanura*	4	CONN
3	6/6/2012	Devon Woods, Kittery	ME	**L**	*Cs*	*melanura*	7	CONN
26	06/13/12	Kittery Town Forest	ME	**L**	*Cs*	*melanura*	11	CONN
27	06/13/12	Devon Woods, Kittery	ME	**L**	*Cs*	*melanura*	3	CONN
55	6/27/2012	Kittery Town Forest	ME	**L**	*Cs*	*melanura*	1	CONN
55	6/27/2012	Devon Woods, Kittery	ME	**L**	*Cs*	*melanura*	2	CONN

2 CDC carbon dioxide/light traps were placed weekly at 2 permanent locations:

Kittery Town Forest

Devon Woods, Kittery

We placed additional light traps at the following sites due to reduced collections at the Devon woods site in an attempt to maximize collections of WNV/EEE species:

MaKenzie Drive, Kittery Solid Waste Facility

Fernald Drive

Page Street

Old Post Road Memorial Field

It was determined that the Old Post Road, Memorial Athletic Field provided the species we needed and it is a critical site to monitor for arbovirus due to increased human activity. This site will replace Devon Woods.

78 total mosquito batches* consisting of 679 adult females were sent to Maine Health and Environmental Testing Lab

4	7/3/2012	Kittery Town Forest	**L**	*Oc*	*canadensis*	42	NEG
5	7/3/2012	Kittery Town Forest	**L**	*Cs*	*melanura*	1	NEG
6	7/3/2012	Kittery Town Forest	**L**	*Cx*	*pipiens*	1	NEG
7	7/3/2012	Devon Woods, Kittery	**L**	*Oc*	*canadensis*	50	NEG
8	7/3/2012	Devon Woods, Kittery	**L**	*Oc*	*canadensis*	50	NEG
9	7/3/2012	Devon Woods, Kittery	**L**	*Cs*	*melanura*	1	NEG
10	7/3/2012	Devon Woods, Kittery	**L**	*Oc*	*canadensis*	30	NEG
11	7/10/2012	MaKenzie Drive, Kittery Solid Waste Facility, Kittery	**L**	*Oc*	*canadensis*	25	NEG
12	7/10/2012	Kittery Town Forest	**L**	*Oc*	*canadensis*	14	NEG
13	7/10/2012	Kittery Town Forest	**L**	*Cs*	*melanura*	2	NEG
14	7/10/2012	Kittery Town Forest	**L**	*Ae*	*vexans*	6	NEG
23	7/17/2012	Fernald Drive	**L**	*Oc*	*canadensis*	37	NEG
24	7/17/2012	Kittery Town Forest	**L**	*Oc*	*canadensis*	17	NEG
25	7/17/2012	Kittery Town Forest	**L**	*Cs*	*melanura*	4	NEG
41	7/24/2012	Page Street	**L**	*Ae*	*vexans*	20	NEG
42	7/24/2012	Page Street	**L**	*Oc*	*canadensis*	6	NEG

38	7/24/2012	Kittery Town Forest	**L**	*Oc*	*canadensis*	17	NEG
39	7/24/2012	Kittery Town Forest	**L**	*Cs*	*melanura*	1	NEG
40	7/24/2012	Kittery Town Forest	**L**	*Cs*	*morsitans*	1	NEG
46	7/31/2012	Kittery Town Forest	**L**	*Oc*	*canadensis*	10	NEG
47	7/31/2012	Kittery Town Forest	**L**	*Cs*	*morsitans*	1	NEG
48	7/31/2012	Old Post Road Memorial Field	**L**	*Ae*	*vexans*	5	NEG
49	7/31/2012	Old Post Road Memorial Field	**L**	*Cs*	*melanura*	6	NEG
50	7/31/2012	Old Post Road Memorial Field	**L**	*Cx*	*pipiens*	5	NEG
51	7/31/2012	Old Post Road Memorial Field	**L**	*Cx*	*restuans*	1	NEG
67	08/08/12	Kittery Town Forest	**L**	*Cq*	*perturbans*	18	NEG
68	08/08/12	Kittery Town Forest	**L**	*Cs*	*melanura*	1	NEG
69	08/08/12	Kittery Town Forest	**L**	*Oc*	*canadensis*	1	NEG
55	08/08/12	Old Post Road Memorial Field	**L**	*Cq*	*perturbans*	20	NEG
56	08/08/12	Old Post Road Memorial Field	**L**	*Cx*	*salinarius*	18	NEG
57	08/08/12	Old Post Road Memorial Field	**L**	*Cs*	*melanura*	1	NEG
58	08/08/12	Old Post Road Memorial Field	**L**	*Cx*	*pipiens*	4	NEG
59	08/08/12	Old Post Road Memorial Field	**L**	*Cx*	*restuans*	1	NEG
60	08/08/12	Old Post Road Memorial Field	**L**	*Ae*	*vexans*	2	NEG
70	8/14/2012	Kittery Town Forest	**L**	*Cq*	*perturbans*	35	NEG
71	8/14/2012	Kittery Town Forest	**L**	*Cs*	*melanura*	2	NEG
72	8/14/2012	Kittery Town Forest	**L**	*Oc*	*canadensis*	1	NEG
73	8/14/2012	Old Post Road Memorial Field	**L**	*Cs*	*melanura*	3	NEG
74	8/14/2012	Old Post Road Memorial Field	**L**	*Oc*	*triseriatus*	3	NEG
75	8/14/2012	Old Post Road Memorial Field	**L**	*Cs*	*salinarius*	10	NEG
76	8/14/2012	Old Post Road Memorial Field	**L**	*Ae*	*vexans*	2	NEG
77	8/14/2012	Old Post Road Memorial Field	**L**	*Oc*	*sollicitans*	2	NEG
88	8/21/2012	Kittery Town Forest	**L**	*Cq*	*perturbans*	6	NEG
89	8/21/2012	Kittery Town Forest	**L**	*Cs*	*morsitans*	1	NEG
90	8/21/2012	Kittery Town Forest	**L**	*Oc*	*sollicitans*	2	NEG
91	8/21/2012	Kittery Town Forest	**L**	*Cs*	*melanura*	1	NEG
92	8/21/2012	Kittery Town Forest	**L**	*Ae*	*vexans*	1	NEG
93	8/21/2012	Kittery Town Forest	**L**	*Oc*	*triseriatus*	2	NEG
94	8/21/2012	Kittery Town Forest	**L**	*An*	*quadrimaculatus*	5	NEG
95	8/21/2012	Old Post Road Memorial Field	**L**	*Oc*	*sollicitans*	4	NEG
96	8/21/2012	Old Post Road Memorial Field	**L**	*Cx*	*pipiens*	2	NEG
97	8/21/2012	Old Post Road Memorial Field	**L**	*Cx*	*salinarius*	2	NEG
98	8/21/2012	Old Post Road Memorial Field	**L**	*Ae*	*vexans*	1	NEG
99	8/21/2012	Old Post Road Memorial Field	**L**	*Cq*	*perturbans*	1	NEG
132	8/28/2012	Old Post Road Memorial Field	**L**	*Ae*	*vexans*	10	NEG
133	8/28/2012	Old Post Road Memorial Field	**L**	*Oc*	*japonicus*	8	NEG
134	8/28/2012	Old Post Road Memorial Field	**L**	*Cs*	*melanura*	4	NEG
135	8/28/2012	Old Post Road Memorial Field	**L**	*Oc*	*triseriatus*	2	NEG
136	8/28/2012	Old Post Road Memorial Field	**L**	*Cx*	*salinarius*	2	NEG
147	9/5/2012	Kittery Town Forest	**L**	*Ae*	*vexans*	38	NEG
148	9/5/2012	Kittery Town Forest	**L**	*Cs*	*melanura*	11	NEG
149	9/5/2012	Kittery Town Forest	**L**	*Ae*	*cinerus*	23	NEG

150	9/5/2012	Kittery Town Forest	**L**	*Cx*	*salinarius*	4	NEG
151	9/5/2012	Old Post Road Memorial Field	**L**	*Ae*	*vexans*	1	NEG
159	09/12/12	Kittery Town Forest	**L**	*Ae*	*vexans*	10	NEG
160	09/12/12	Kittery Town Forest	**L**	*Cs*	*melanura*	1	NEG
161	09/12/12	Kittery Town Forest	**L**	*Cx*	*salinarius*	1	NEG
162	09/12/12	Old Post Road Memorial Field	**L**	*Ae*	*vexans*	2	NEG
163	9/18/2012	Old Post Road Memorial Field	**L**	*Cs*	*melanura*	9	NEG
164	9/18/2012	Old Post Road Memorial Field	**L**	*Ae*	*vexans*	3	NEG
165	9/18/2012	Old Post Road Memorial Field	**L**	*Cx*	*pipiens*	5	NEG
166	9/19/2012	Kittery Town Forest	**L**	*Cs*	*melanura*	1	NEG
167	9/19/2012	Kittery Town Forest	**L**	*Ae*	*vexans*	28	NEG
168	9/19/2012	Kittery Town Forest	**L**	*Cx*	*salinarius*	2	NEG
189	9/25/2012	Old Post Road Memorial Field	**L**	*Cs*	*melanura*	3	NEG
190	9/25/2012	Old Post Road Memorial Field	**L**	*Ae*	*vexans*	1	NEG
191	9/25/2012	Kittery Town Forest	**L**	*Cs*	*melanura*	2	NEG
192	9/25/2012	Kittery Town Forest	**L**	*Ae*	*vexans*	3	NEG

All batches tested NEG for EEE/WNV in Kittery for 2012

* A batch is up to 50 individual adult mosquitoes of the same species in one vial

2,633 total individuals and 26 different species identified collected in 2012 and as compared with 2011 and 2010 collection data.

2012 Species	% of Total Collected	# Collected
canadensis	35.55%	936
perturbans	32.93%	867
vexans	5.51%	145
melanura	3.11%	82
salinarius	3.08%	81
abserratus	3.04%	80
cinerus	2.77%	73
punctipennis	2.58%	68
cantator	1.90%	50
stimulans	1.86%	49
punctor	1.52%	40
triseriatus	1.10%	29
sapphirina	0.91%	24
quadrimaculatus	0.80%	21
pipiens	0.68%	18
japonicus	0.61%	16
sollicitans	0.46%	12
walkeri	0.42%	11
implicatus	0.38%	10
ferox	0.19%	5
restuans	0.19%	5
morsitans	0.11%	3
provocans	0.11%	3
territans	0.08%	2
trivitattus	0.08%	2
fitchii	0.04%	1
		2633

2011 Species	% of Total Collected	# Collected
perturbans	51.69%	1073
canadensis	15.94%	331
stimulans	4.82%	100
vexans	4.14%	86
punctor	3.90%	81
cinerus	3.66%	76
cantator	3.61%	75
melanura	2.84%	59
abserratus	1.69%	35
punctipennis	1.30%	27
triseriatus	1.30%	27
provocans	1.06%	22
sapphirina	1.06%	22
sollicitans	0.87%	18
salinarius	0.77%	16
morsitans	0.34%	7
ferox	0.24%	5
japonicus	0.19%	4
quadrimacutus	0.14%	3
excrucians	0.10%	2
trivittatus	0.10%	2
walkeri	0.10%	2
fitchii	0.05%	1
pipiens	0.05%	1
territans	0.05%	1
		2076

2010 Species	% of Total Collected	# Collected
perturbans	63.84%	2700
vexans	15.91%	673
cantator	3.85%	163
melanura	2.53%	107
canadensis	2.39%	101
cinerus	2.39%	101
sapphirina	1.84%	78
ferox	1.44%	61
triseriatus	0.92%	39
excrucians	0.90%	38
sollicitans	0.87%	37
japonicus	0.73%	31
restuans	0.47%	20
abserratus	0.38%	16
quadrimaculatus	0.35%	15
punctipennis	0.26%	11
pipiens	0.24%	10
trivittatus	0.24%	10
salinarius	0.12%	5
morsitans	0.07%	3
punctor	0.07%	3
walkeri	0.07%	3
provocans	0.05%	2
aurifer	0.02%	1
intrudens	0.02%	1
		4229

Municipal progress report of control and other activities summary 2012

Kittery, Maine

Date	Activity
2/1/2012	E-mail Maryann Conroy
2/2/2012	E-mail Jeff Normandin
2/9/2012	E-mail Jeff Normandin

2/15/2012	E-mail Amber Harrison
2/15/2012	E-mail Amber Harrison attachments
2/16/2012	Meeing with Amber Harrison, Jeff Normandin
4/30/2012	Residential Spray request
5/24/2012	Bt treatment cattail and ditch sites # 9, 15, 17, 25, 18, 20, 21, 60, 40, 37, 36, 22, 23, 24
5/24/2012	Bt treatment woodland pools and ditch sites # 8, 31, 27, 30, 28, 19, 34, 33, 32
5/24/2012	Bt treatment red maple Site # 12 and ditch site # 13, 34, 35
5/24/2012	Bt treatment surrounding ditch, flooded wooded and basins at Devon Woods Road/wilson road int.
5/25/2012	E-mail municipalities with 2012 mosquito collection and testing information
5/30/2012	Bt treatment site #16, 1, 2, 3, 4, 5
5/30/2012	Bt treatment Mill Pond Road, Merrymeeting Village, Dunlea Ave, Page street, 31 Old Post Road
5/30/2012	Bt treatment Memorial/Stanly Field, Old Dennet Rd, South Eliot, Ranger Drive, Cove Landing
5/30/2012	Bt treatment agricultural/horses Shephard's Cv area
5/30/2012	Homeowner requests and estimate for adulticiding, Page Mead
6/1/2012	E-mail Municipal Progress Reports to date
6/1/2012	E-mail Maryann Conroy: add Amber Harrison to municipal mailings
6/5/2012	Mosquito Light traps out
6/6/2012	Bt treatment newly wetted woodland pool sites on Devon Woods Road
6/6/2012	Mosquito light traps in
6/6/2012	Identify and log collected mosquitoes
6/12/2012	Mosquito Light traps out
6/13/2012	Mosquito light traps in
6/14/2012	Identify and log collected mosquitoes
6/14/2012	E-mail semi-monthly Mosquito collection data to date
6/18/2012	Mosquito Light traps out
6/19/2012	Mosquito light traps in
6/19/2012	Identify and log collected mosquitoes
6/26/2012	Mosquito Light traps out
6/27/2012	Mosquito light traps in
6/27/2012	Identify and log collected mosquitoes
6/28/2012	E-mail semi-monthly Mosquito collection data to date
7/3/2012	E-mail Municipal Progress Reports to date
7/2/2012	Mosquito Light traps out
7/3/2012	Mosquito light traps in
7/3/2012	Identify and log collected mosquitoes
7/9/2012	Mosquito Light traps out
7/10/2012	Mosquito light traps in
7/10/2012	Identify and log collected mosquitoes
7/10/2012	E-mail semi-monthly Mosquito collection data to date
7/16/2012	Mosquito Light traps out
7/17/2012	Mosquito light traps in
7/17/2012	Identify and log collected mosquitoes
7/20/2012	saltmarsh larval survellience
7/23/2012	Mosquito Light traps out
7/24/2012	Mosquito light traps in
7/24/2012	Identify and log collected mosquitoes
7/24/2012	E-mail semi-monthly Mosquito collection data to date
7/30/2012	Mosquito Light traps out
7/31/2012	Mosquito light traps in
7/31/2012	Identify and log collected mosquitoes
8/6/2012	Mosquito Light traps out
8/7/2012	Mosquito light traps in

8/7/2012	Identify and log collected mosquitoes
8/7/2012	E-mail semi-monthly Mosquito collection data to date
8/12/2012	Mosquito Light traps out
8/13/2012	Mosquito light traps in
8/13/2012	Identify and log collected mosquitoes
8/20/2012	Mosquito Light traps out
8/21/2012	Mosquito light traps in
8/21/2012	Identify and log collected mosquitoes
8/21/2012	E-mail semi-monthly Mosquito collection data to date
8/24/2012	Emergency Adulticide barrier applications: Shapleigh, Memorial Field, Fort Foster area
8/27/2012	Mosquito Light traps out
8/28/2012	Mosquito light traps in
8/28/2012	Identify and log collected mosquitoes
9/4/2012	Mosquito Light traps out
9/5/2012	Mosquito light traps in
9/5/2012	Identify and log collected mosquitoes
9/5/2012	E-mail semi-monthly Mosquito collection data to date
9/6/2012	E-mail Municipal Progress Reports to date
9/10/2012	Mosquito Light traps out
9/11/2012	Mosquito light traps in
9/11/2012	Identify and log collected mosquitoes
9/17/2012	Mosquito Light traps out
9/18/2012	Mosquito light traps in
9/18/2012	Identify and log collected mosquitoes
9/19/2012	E-mail semi-monthly Mosquito collection data and State Arbo update
9/24/2012	Mosquito Light traps out
9/25/2012	Mosquito light traps in
9/25/2012	Identify and log collected mosquitoes
10/4/2012	E-mail semi-monthly Mosquito collection data and State Arbo update
10/15/2012	Larvicide melanura habitats: memorial park, page lane, makenzie lane
10/15/2012	Larvicide melanura habitats: lewis road, Idlewood/rest area road
10/17/2012	E-mail Municipal Progress Reports to date

Maine State 2012 Mosquito Disease Summary:

Maine Weekly Arboviral Surveillance Report

October 15, 2012

Maine Center for Disease Control and Prevention
An Office of the Department of Health and Human Services

Paul R. LePage, Governor — Mary C. Mayhew, Commissioner

January 1, 2012 – October 13, 2012:

Humans

	Number Tested	WNV positive	EEE Positive
Current Week	1	0	0
2012 Year to Date	72	1*	0

Human arboviral testing performed at Maine's Health and Environmental Testing Laboratory (HETL); testing may be performed year round

*1 human tested positive for WNV in Maine, however the patient was a Philadelphia resident and will be counted as a case in PA

Animals

	Number Tested	WNV positive	EEE Positive
Current Week	0	0	0
2012 Year to Date	33	0	3*

Animal arboviral testing may be performed at HETL or through the National Veterinary Services Laboratory (NVSL); testing may be performed year round

* 28 mist-netted birds were submitted to CDC-Fort Collins as part of a serosurvey, 2 were sero-positive for EEE. Sero-positivity indicates exposure to the disease, not necessarily active infection.

Mosquitoes

	Pools Tested	WNV positive	EEE Positive
Current Week	30	0	0
2012 Year to Date	1322	7	0

Mosquito arboviral testing performed at HETL; mosquito collection begins July 1 and continues through September 30*

*Mosquito collections extended through October 6

Only completed testing is included in this report.

WNV = West Nile Virus
EEE = Eastern Equine Encephalitis

2012 Positive Results

Species	Date Collected	County	Agent
Veery	05/21/2012	Cumberland	EEE
Gray Catbird	05/14/2012	Cumberland	EEE
Culiseta melanura	08/01/2012	York	WNV
Culex pipiens/restuans	08/01/2012	Cumberland	WNV
Culiseta melanura	08/23/2012	Cumberland	WNV
Culiseta melanura	08/23/2012	Cumberland	WNV
Culiseta melanura	08/31/2012	Cumberland	WNV
Culex pipiens/restuans	09/06/2012	York	WNV
Culiseta melanura	08/30/2012	Cumberland	WNV
Pheasant	09/06/2012	York	EEE

* 28 mist-netted birds were submitted to CDC-Fort Collins as part of a serosurvey, 2 were sero-positive for EEE. Sero-positivity indicates exposure to the disease, not necessarily active infection.

Anecdotal Description of Mosquito Species Occurring in Maine and New Hampshire:

Compiled by Richard Dearborn and Kimberly A. Foss: Maine Department of Conservation, Forest Health and Monitoring, Insect and Disease Lab 2003, from a variety of sources. Revised by Kimberly A. Foss, SWAMP, Inc/Municipal Pest Management Services, Inc. October 2010

GENUS *species*	Current Disease Associations (X)=primary vector	Estimated Flight Range	Bites Humans	Adult Host	Larval Habitat	No. Gen./ Yr.	Over-winter Stage	Common Names and Comments
AEDES								
cinereus (Meigen)	WNV EEE SLE	100 to 1000 feet	Yes Major pest in wooded or shaded areas	Mammals	Wooded snowmelt pools, semi-permanent bogs and swamps	2-3	Egg	Day and night biter
vexans (Meigen)	WNV EEE	5 to 10 miles	Yes Major pest	Mammals	Wooded temporary, permanent, semipermanent pools, open flooded areas	2-3	Egg	Day and night biter
OCHLEROTATUS								
abserratus (Felt & Young)			Yes Common spring pest	Mammals, birds	Snowmelt pools	1	Egg	Day and night biter
atropalpus (Coquillett)	WNV	100 to 1000 feet	Yes Around breeding areas	Mammals	Rock pools, some artificial containers	1	Egg	Day and night biter
aurifer (Coquillett)		½ mile	Yes Around breeding areas	Mammals	Snowmelt pools, swamps, bogs, open marshes	1	Egg	Day and night biter
canadensis (Theobald)	WNV EEE	½ mile	Yes Major late spring pest around breeding areas	Mammals, amphibians, reptiles, sometimes birds	Wooded snowmelt pools, flood waters	1-2	Egg	Day and night biter

cantator (Coquillett)	WNV EEE		Yes	Mammals, birds	Salt marshes, fresh or brackish water	1+	Egg	Day and night biter
communis (DeGeer)			Yes	Mammals, birds	Wooded snowmelt pools	1	Egg	Day and evening biter
decticus (Howard, Dyar and Knab)			Yes	Mammals, birds	Sphagnum, acid bogs	1	Egg	Day and night biter
diantaeus (Howard, Dyar and Knab)			Yes Wooded areas	Mammals, birds	Wooded snowmelt pools	1	Egg	Morning and evening biter
dorsalis (Meigen)	WNV SLE	10 to 20 miles	Yes	Large mammals, sometimes large birds	Temporary freshwater and brackish pools marshes and ditches	1+	Egg	"Pale marsh mosquito" **New record for 2003** (M. Holman)
excrucians (Walker)		½ mile	Yes Common spring-summer pest	Mammals, sometimes birds	Wooded snowmelt pools, marshes	1-2	Egg	Day and evening biter
fitchii (Felt & Young)	WNV	About 1 mile	Yes Common spring-summer pest in wooded areas	Mammals, birds	Snowmelt pools, bogs, grassy roadside ditches	1	Egg	Day and night biter
hendersoni (Cockerell)		About 1 mile	Yes	Mammals	Tree holes, occasionally tires	1-2	Egg	
implicatus (Vockeroth)			Yes Spring pest	Mammals	Wooded snowmelt pools	1	Egg	Day and night biter
intrudens (Dyar)			Yes Common spring pest	Mammals	Wooded snowmelt pools	1	Egg	Day and night biter
japonicus (Theobald)	WNV SLE		Yes	Mammals, birds	Tires, artificial containers, tree holes, rock pools	2+	Egg	Day biter **New Record Portland, Maine: June 26, 2001** (K.Foss)

pionips (Dyar)			Rarely		Snowmelt pools	1	Egg	
provocans (Walker)	WNV		Yes Early spring	Mammals	Semipermenent marshes, wooded snowmelt pools	1	Egg	Evening biter
punctor (Kirby)			Yes Spring	Mammals	Wooded snowmelt pools	1	Egg	Day and night biter
riparius (Dyar and Knab)								**New record for 2003** (M. Holman)
sollicitans (Walker)	WNV EEE	100 miles or more	Yes Major coastal summer pest	Mammals, birds, reptiles, amphibians	Salt marshes	4+	Egg	"Eastern salt marsh mosquito", Day and night biter
sticticus (Meigen)	WNV	4 miles	Yes Major pest around breeding areas	Mammals, birds, reptiles	Flood waters, wooded snowmelt pools	1-2	Egg	Day and evening biter
stimulans (Walker)	WNV	2 miles	Yes Major spring pest	Mammals, birds	Snowmelt pools	1	Egg	Long lived
taeniorhynchus (Wiedemann)	WNV EEE		Yes Major pest around breeding areas	Birds, mammals	Salt marshes	2+	Egg	"Black salt marsh mosquito", Day and evening biter **New record for 2002**(M. Holman)
triseriatus (Say)	WNV LAC (X) EEE	½ to 1 mile	Yes Common summer pest around breeding areas	Mammals, birds, reptiles, amphibians	Tires, artificial containers, tree holes	1	Egg	"Tree hole mosquito" Day and evening biter
trivittatus (Coquillett)	WNV EEE	½ mile	Yes Common summer pest around breeding areas	Mammals, birds	Wooded snowmelt pools, floodwaters	1	Egg	Day and evening biter

ANOPHELES								
barberi (Coquillett)	WNV		Yes	Mammals, sometimes birds	Tree holes, artificial containers	1-2	Larva	**New record for 2004** (M. Holman)
earlei (Vargas)		1 to 2 miles	Yes Common spring pest	Mammals	Confined bodies of water	1-2	Adult	Day and night biter
punctipennis (Say)	WNV Malaria	1 to 2 miles	Yes Major summer pest	Mammals, birds	Confined and flowing bodies of water, artificial containers	2-3	Adult	"Spotted-winged Mosquito", Day and night biter
quadrimaculatus (Say)	WNV Malaria (X)	1 mile	Yes Common summer pest	Mammals, sometimes birds and reptiles	Confined bodies of water	2-3	Adult	Common "Malaria Mosquito", Day and night biter
walkeri (Theobald)	WNV Malaria	1 to 2 miles	Yes	Mammals	Confined bodies of water	2+	Egg	Day and night biter
COQUILLETTIDIA								
perturbans (Walker)	WNV EEE	1 to 10 miles	Yes Major summer pest	Birds, mammals, amphibians, sometimes reptiles	Cattail marshes	1-2	Larva	Larvae attach to the base of aquatic plants Day and night biter
CULEX								
pipiens (Linnacus)	WNV **(X)** SLE **(X)** EEE	1 mile or more	Rarely	Birds, rarely mammals	Artificial containers, grassy roadside ditches, catch basins	1-2	Adult	"Northern house mosquito"
restuans (Theobald)	WNV **(X)** SLE **(X)** EEE	1 mile	Yes	Birds, sometimes mammals	Tires, tree holes, artificial containers, puddles, grassy roadside ditches, catch basins	1-2	Adult	Day and night biter

salinarius (Coquillett)	WNV **(X)** SLE **(X)** EEE		Yes	Birds, mammals	Artificial containers, grassy roadside ditches, brackish water, catch basins	1-2	Adult	Night biter, enters homes
territans (Walker)	WNV EEE	1 mile	Rarely	Cold blooded vertebrates (e.g. frogs), rarely birds	Pond edges, pools, marshes, grassy roadside ditches, artificial containers	1-3	Adult	
CULISETA								
impatiens (Walker)	WNV		Yes Uncommon early spring species	Mammals	Semipermanent ponds, bogs, wooded ground pools	1	Adult	Long lived, rare, day and evening biter
inornata (Williston)	WNV EEE		Yes Uncommon early spring species	Mammals	Wooded snowmelt pools, marshes, bogs, swamps	2+	Adult	"Winter mosquito"
melanura (Coquillett)	WNV EEE **(X)**	100 to 1000 yards	Rarely	Birds	Within stumps in acidic swamps and bogs, snowmelt pools	2+	Larva	
minnesotae (Barr)			Rarely	Birds, small mammals, turtles	Snowmelt pools, marshes	1-2	Adult	**New Record for 2001** (M. Holman)
morsitans (Coquillett)	WNV EEE		Rarely	Birds	Semipermanent swamps, wooded snowmelt pools, marshes, bogs	1	Egg	
PSOROPHORA								
ciliata (Fabricius)	WNV EEE	5 to 10 miles	Yes, day and night biter Uncommon	Mammals	Temporary open sunlit rain filled fields and flood-water areas	1+	Egg	"Gallinipper" **New Record for 2006** S. Berwick (K. Foss)
ferox (Humboldt)	WNV EEE	Up to 1 mile	Yes Within wooded	Mammals	Wooded temporary ground pools,	1	Egg	"White-footed woods mosquito",

			areas, Uncommon species		flood-water areas			day and evening biter **New Record for 2001** (M. Holman)
URANOTAENIA								
sapphirina (Osten Sacken)	WNV	Up to 8 miles	Rarely Summer species	Birds	Permanent and semipermanent ponds, pools, swamps, marshes	1-2	Adult	**New Record Portland, Maine: July 24, 2001** (K. Foss)
WYEOMYIA								
smithii (Coquillett)			Never	Feeds as larvae on other insects in pitcher plant fluid	Sphagnum bogs	1	Larva	"Pitcher plant mosquito" spends most of the year in larval stage
ORTHOPODOMYIA								
signifera (Coquillett)	WNV EEE	Less than 100 ft	Rarely, uncommon species slow to develop	Birds	Deep tree rot holes and wooden containers	2+	Egg in north, larvae in south	